Response to November 16, 2010, Office Action

Page 3

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

(Currently Amended) An antifouling coating composition comprising 20-100% by weight, calculated on the total amount of film-forming components, of a film-forming polymer (A) having an acid number of from 25 to 350mg KOH/g and having an acrylic backbone bearing at least one terminal group of the formula:

$$-X - O - M - R$$

wherein X represents

M is <u>Cu, Zn or Te</u> a metal of Group lb, Ila, Ilb, Illa, Illb, IVa, IVb, Va, Via, Vlb, Vlla, and VIII of the Periodic Table with a valency of 2 or more and a degree of ionisation less than that of the alkali metals metal;

n is an integer of 1 when X is $-\stackrel{\circ}{-}\stackrel{\circ}{-}\stackrel{\circ}{-}\stackrel{\circ}{-}\stackrel{\circ}{-}$, or $-\stackrel{\circ}{-}\stackrel{\circ}{-}$, or 1 to 2 when X is $-\stackrel{\circ}{-}\stackrel{\circ}{-}\stackrel{\circ}{-}$; R represents an organic residue selected from

is a monovalent organic residue, and

80-0% by weight, calculated on the total amount of film-forming components, of polymer (B) is selected from polymers which are free of -X-[-O-M-R]n terminal groups but which are reactive in water, slightly water-soluble, water-sensitive, or insoluble in water.

a copper-based biocide for aquatic organisms, said biocide comprising one or more of cuprous oxide, cuprous thiocyanate, cuprous sulphate and copper pyrithione;

Response to November 16, 2010, Office Action

Page 4

wherein the antifouling coating composition is substantially free of any comprises less than 1 wt.% of biocidal zinc compounds and substantially free less than 1 wt.% of rosin, and the copper-based biocide has a metallic copper content below 2% by weight, based on the total weight of the copper-based biocide.

2. (Cancelled)

- 3. (Previously Presented) The antifouling coating composition according to claim 1, wherein the film-forming polymer (A) is an acrylic polymer in which X represents $\begin{array}{c} O \\ | I \\ -C \end{array}$, M is copper and R represents $\begin{array}{c} O \\ | I \\ -C \end{array}$ wherein R1 is a monovalent organic residue.
- 4. (Previously Presented) The antifouling coating composition according to claim 1, wherein the copper-based biocide for aquatic organisms comprises cuprous oxide having a metallic copper content below 2 % by weight, based on the total weight of the cuprous oxide.
- 5. (Previously Presented) The antifouling coating composition according to claim 4, wherein the cuprous oxide has a metallic copper content below 1% by weight, based on the total weight of the cuprous oxide.
- 6. (Previously Presented) The antifouling coating composition according to claim 1, wherein the copper-based biocide for aquatic organisms comprises copper pyrithione.
- 7. (Previously Presented) The antifouling coating composition according to claim 6, characterised in that the copper-based biocide for aquatic organisms comprises a combination of cuprous oxide having a metallic copper content below 2 % by weight, based on the total weight of the cuprous oxide and copper pyrithione.
- 8. (Currently Amended) The antifouling coating composition according to claim 1, wherein the film-forming polymer (A) is an acrylic polymer in which X represents

Response to November 16, 2010, Office Action

Page 5

—C—, M is copper, and R is the residue of an organic monobasic carboxylic acid which has a boiling. point greater than 115 C and an acid value between 50 and 950mg KOH/gramme, wherein the copper-based biocide for aquatic organisms comprises a combination of cuprous oxide having a metallic copper content below 2 % by weight, based on the total weight of the cuprous oxide and copper pyrithione.

- 9. (Currently Amended) A process for protecting a man-made structure to be immersed in a fouling aquatic environment, said process comprising the step of applying the wherein the structure is coated with an antifouling coating composition according to claim 1 to said structure.
- 10. (Cancelled)
- 11. (Previously Presented) A man-made structure immersed in an fouling aquatic environment coated with a coating composition according to claim 1.
- 12. (Original) The man-made structure of claim 11 which is immersed in a low-salinity aquatic environment.
- 13. (Original) The man-made structure of claim 11 wherein the structure is immersed in a low-salinity aquatic environment for part of its life and in a saline aquatic environment for part of its life.
- 14. (New) The antifouling coating composition according to claim 1 wherein the copper-based biocide has a metallic copper content below 1% by weight based on the total weight of the copper-based biocide.
- 15. (New) The antifouling coating composition according to claim 1 wherein the copper-based biocide has a metallic copper content below 0.8% by weight based on the total weight of the copper-based biocide.
- 16. (New) An antifouling coating composition comprising

Response to November 16, 2010, Office Action

Page 6

20-100% by weight, calculated on the total amount of film-forming components, of a film-forming polymer (A) having an acid number of from 25 to 350 mg KOH/g and having an acrylic backbone bearing at least one terminal group of the formula:

$$-X - [O-M-R]_n$$

wherein X represents

M is Cu, Zn or Te;

n is an integer of 1 when X is $-\stackrel{\circ}{C}$, $-\stackrel{\circ}{C}$, or $-\stackrel{\circ}{P}$, or 1 to 2 when X is $-\stackrel{\circ}{K}$; R represents an organic residue OC(=O)R', wherein said residue is of an organic monobasic carboxylic acid which has a boiling point greater than 115°C and an acid value between 50 and 950mg KOH/g; and

a copper-based biocide for aquatic organisms; wherein the antifouling coating composition comprises less than 1 wt.% of any biocidal zinc compounds and less than 1 wt.% of rosin, and in that the copper-based biocide has a metallic copper content below 2% by weight, based on the total weight of the copper-based biocide, said biocide comprising cuprous oxide having a metallic copper content below 2% by weight, based on the total weight of cuprous oxide.

17. (New) The composition of claim 1, wherein the composition comprises 80 - 0% by weight, calculated on the total amount of film-forming components of film-forming polymer (B), wherein said polymer (B) is selected from polymers which are free of -X- $[O-M-R]_n$ terminal groups but which are slightly water soluble, water-sensitive, or insoluble in water, and further wherein:

when said polymer (B) is slightly soluble or water sensitive, said polymer (B) is selected from the group consisting of: polyvinyl methyl ether; polyvinyl ethyl ether; alkyd resins; modified alkyd resins; polyurethanes; saturated polyester resins; and, poly-N-vinyl pyrollidones; and

Response to November 16, 2010, Office Action

Page 7

when said polymer (B) is insoluble in water it is selected from the group consisting of: modified alkyd resins; epoxy polymers; epoxy esters; epoxy urethanes; polyurethanes; linseed oil, castor oil, soy bean oil and derivatives of such oils; vinyl ether polymer; and, polyamine.

18. (New) The composition of claim 16, wherein the composition comprises 80 – 0% by weight, calculated on the total amount of film-forming components of film-forming polymer (B), wherein said polymer (B) is selected from polymers which are free of –X-[O-M-R]_n terminal groups but which are slightly water soluble, water-sensitive, or insoluble in water, and further wherein:

when said polymer (B) is slightly soluble or water sensitive, said polymer (B) is selected from the group consisting of: polyvinyl methyl ether; polyvinyl ethyl ether; alkyd resins; modified alkyd resins; polyurethanes; saturated polyester resins; and, poly-N-vinyl pyrollidones; and

when said polymer (B) is insoluble in water it is selected from the group consisting of: modified alkyd resins; epoxy polymers; epoxy esters; epoxy urethanes; polyurethanes; linseed oil, castor oil, soy bean oil and derivatives of such oils; vinyl ether polymer; and, polyamine.